

## EAST Search History

## EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S95	73	piezoelectric with (pump micropump) with channel and (capillar\$5 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:41
S96	18424	piezoelectric with (pump micropump) same throttl\$4and channel with (capillar\$5 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:41
S97	0	piezoelectric with (pump micropump) same throttl\$4 and channel with (capillar\$5 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:41
S98	140	piezoelectric with (pump micropump) same (flexible membrane diaphragm) and channel with (capillar\$5 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:42
S99	1	piezoelectric with (pump micropump) same (flexible membrane diaphragm) and throttl\$4 and channel with (capillar\$5 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:43
S100	5	piezoelectric with (pump micropump) same (flexible membrane diaphragm) and (choke throttl\$4) and channel with (capillar\$5 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:45
S101	0	piezoelectric with (pump micropump) same (flexible membrane diaphragm) same (choke throttl\$4) and channel with (capillar\$5 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:45

S102	140	piezoelectric with (pump micropump) same (flexible membrane diaphragm) and channel with (capillar\$5 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:45
S103	0	piezoelectric same throttl\$3 same (flexible membrane diaphragm) and channel with (capillar\$5 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:47
S104	1	piezoelectric same throttl\$3 same (flexible membrane diaphragm) and channel and (capillar\$5 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:47
S105	2	piezoelectric same throttl\$3 and channel and (capillar\$5 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:48
S106	1	chamber with piezoelectric same throttl\$3 and channel and (capillar\$5 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:49
S107	2	chamber same piezoelectric same throttl\$3 and channel and (capillar\$5 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:49
S108	1	piezoelectric with pump \$3 and piezoelectric with throttl\$3 and channel and (capillar\$5 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:50
S109	1	piezoelectric with pump \$3 and piezoelectric with throttl\$3 and (capillar\$5 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/19 14:50
S110	5	piezoelectric with pump \$3 and piezoelectric with throttl\$3 and channel	US-PGPUB; USPAT	OR	ON	2009/10/19 14:50
S111	22	piezoelectric with pump \$3 and piezoelectric with throttl\$3	US-PGPUB; USPAT	OR	ON	2009/10/19 14:52

S112	1	piezoelectric with pump \$3 and piezoelectric with throttling\$3 and (microfluidic\$4 capillary \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 09:49
S113	2	piezoelectric with pump \$3 and piezoelectric same throttling\$3 and (microfluidic\$4 capillary \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 09:49
S114	19	("20020042125"   "20020124896"   "20020172969"   "20040200724"   "20050247866"   "4252664"   "5725363"   "5846396"   "6033628"   "6068752"   "6176962"   "6251343"   "6254754"   "6447661"   "6602791"   "6716002"   "6734424"   "6838055"   "7192559").PN.	US-PGPUB; USPAT	OR	ON	2009/10/22 09:52
S115	1	S114 and throttling\$4	US-PGPUB; USPAT	OR	ON	2009/10/22 09:52
S116	101	(micropump pump\$3) with throttling\$3 and (micropump pump\$4) with (microfluidic\$4 capillary\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 09:53
S117	12	(micropump pump\$3) with throttling\$3 and (micropump pump\$4) with (microfluidic\$4 capillary\$4) and piezoelectric	US-PGPUB; USPAT	OR	ON	2009/10/22 09:53
S118	101	(micropump pump\$3) with throttling\$3 and (micropump pump\$4) with (microfluidic\$4 capillary\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 09:56
S119	248949	((("422") or ("73") or ("436")).CLAS.	US-PGPUB; USPAT	OR	OFF	2009/10/22 09:56
S120	20	S119 and (micropump pump\$3) with throttling\$3 and (micropump pump \$4) with (microfluidic\$4 capillary\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 09:56

S121	621	S119 and (micropump pump\$3) with throttling\$3 and (micropump pump \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 09:58
S122	39	S119 and (micropump pump\$3) with throttling\$3 and (micropump pump \$4) and piezoelectric	US-PGPUB; USPAT	OR	ON	2009/10/22 09:58
S123	58	S119 and (micropump pump\$3) with throttling\$3 and (micropump pump \$4) and (microfluidic\$4 capillary\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 09:59
S124	58	S119 and (micropump pump\$3) with throttling\$3 and (microfluidic\$4 capillary\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 09:59
S125	38	S119 and (micropump pump\$3) with throttling\$3 and (microfluidic\$4 capillary\$4) not S120	US-PGPUB; USPAT	OR	ON	2009/10/22 10:00
S126	69	S119 and (micropump pump\$3) with throttling\$3 and (microfluidic\$4 capillary\$4 biochip chip) not S120	US-PGPUB; USPAT	OR	ON	2009/10/22 10:00
S127	79	S119 and (micropump pump\$3) with (choke throttling\$3) and (microfluidic\$4 capillary\$4 biochip chip) not S120	US-PGPUB; USPAT	OR	ON	2009/10/22 10:05
S128	46	S119 and (micropump pump\$3) with (choke throttling\$3) and (microfluidic\$4 capillary \$4) not S120	US-PGPUB; USPAT	OR	ON	2009/10/22 10:05
S129	3	S119 and (micropump pump\$3) with (choke throttling\$3) and (microfluidic\$4 capillary \$4) with channel not S120	US-PGPUB; USPAT	OR	ON	2009/10/22 10:05
S130	20	(micropump pump\$3) near5 (choke throttling\$3) and (microfluidic\$4 capillary\$4) with channel not S120	US-PGPUB; USPAT	OR	ON	2009/10/22 10:07
S131	4	(choke throttling\$3) with pressure adj differential with direction and (capillary\$4 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:10

S132	7	(choke throttl\$3) with pressure near1 differential with direction and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:11
S133	87	(choke throttl\$3) with pressure near1 differential and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:12
S134	13	S119 and (choke throttl\$3) with pressure near1 differential and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:12
S135	9	S119 and (choke throttl\$3) with pressure near1 differential and (capillar\$4 microfluid\$4) and (pump\$4 micropump\$3)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:13
S136	58	pressure near1 differential with control\$4 with direction and (capillar\$4 microfluid\$4) and (pump\$4 micropump\$3)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:24
S137	16	S119 and pressure near1 differential with control\$4 with direction and (capillar\$4 microfluid\$4) and (pump\$4 micropump\$3)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:25
S138	0	S119 and pressure near1 differential same (channel) with (dimension size diameter) same control\$4 with direction and (capillar\$4 microfluid\$4) and (pump\$4 micropump\$3)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:28
S139	0	S119 and pressure near1 differential same (channel) with (dimension size diameter) same control\$4 with direction and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:28

S140	0	pressure near1 differential same (channel) with (dimension size diameter) same control \$4 with direction and (capillar\$4 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:29
S141	8	pressure near1 differential same (channel) with (dimension size diameter) same direction and (capillar \$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:29
S142	297	pressure same (channel) with (dimension size diameter) same direction and (capillar \$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:30
S143	11	pressure same (channel) with (dimension size diameter) same control \$4 with direction and (capillar\$4 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:30
S144	31	pressure with (channel) with (dimension size diameter) with direction and (capillar \$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:36
S145	2	S119 and pressure with (channel) with (dimension size diameter) with direction and (capillar \$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:36
S146	117	S119 and pressure with (stop) near2 (flow junction) and (capillar \$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:37
S147	0	(channel) with manipulata\$4 near2 (dimension size diameter) with direction and (capillar \$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:41

S148	944	(channel) with (dimension size diameter) with direction and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:41
S149	3	(channel) with (dimension size diameter) with control \$4 near1 direction and (capillar\$4 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:41
S150	7	S119 and pressure with (stop) near2 (flow junction) with (pump\$4 micropump\$4) and (capillar\$4 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:44
S151	5	(restrictor) with pressure near1 differential with direction and (capillar \$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:45
S152	118	channel near2 length with pressure near1 differential and (capillar \$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:49
S153	36	S119 and channel near2 length with pressure near1 differential and (capillar \$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:49
S154	17	S119 and channel near2 length with pressure near1 differential same (pump \$4 micropump) and (capillar\$4 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:50
S155	14	S119 and (pressure near1 differen\$5 resistance) with outlet with inlet with direction and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 10:56
S156	0	S119 and (pressure near1 differen\$5 resistance) with outlet with inlet same control \$4 near1 direction same channel near2 length and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:00

S157	126	S119 and (pressure near1 differen\$5 resistance) with channel near2 length and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:00
S158	2	S119 and (pressure near1 differen\$5 resistance) with channel near2 length with inlet with outlet and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:01
S159	89	(pressure near1 differen\$5 resistance) with length with inlet with outlet and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:03
S160	29	S119 and (pressure near1 differen\$5 resistance) with length with inlet with outlet and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:03
S161	0	(pressure near1 differen\$5 resistance) with length near1 inlet with length near1 outlet and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:07
S162	26035	(pressure near1 differen\$5 resistance) with (manipulat\$4 differen\$4) near2 length inlet with outlet and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:07
S163	3	(pressure near1 differen\$5 resistance) with (manipulat\$4 differen\$4) near2 length with inlet with outlet and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:07
S164	101	(pressure near1 differen\$5 resistance) with (manipulat\$4 differen\$4) near2 length with channel and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:09



S165	44	S119 and (pressure near1 differen\$5 resistance) with (manipulat\$4 differen \$4) near2 length with channel and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:09
S166	2	S119 and (pressure near1 differen\$5 resistance) with (length near1 channel) with direction with flow and (capillar\$4 microfluid \$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:13
S167	117	piezoelectric with (pump \$4 micropump\$4) and (capillar\$4 microfluid \$4) and substrate with layer\$3 and (through-hole through adj hole)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:20
S168	6	piezoelectric with (pump \$4 micropump\$4) with layer and (capillar\$4 microfluid\$4) and substrate with layer\$3 and (through-hole through adj hole)	US-PGPUB; USPAT	OR	ON	2009/10/22 11:20
S169	16	piezoelectric with (pump \$4 micropump\$4) with layer and (capillar\$4 microfluid\$4) and substrate with layer\$3	US-PGPUB; USPAT	OR	ON	2009/10/22 11:21
S170	45	piezoelectric with (pump \$4 micropump\$4) with layer and (capillar\$4 microfluid\$4) and layer \$3	US-PGPUB; USPAT	OR	ON	2009/10/22 11:24
S171	29	piezoelectric with (pump \$4 micropump\$4) with layer and (capillar\$4 microfluid\$4) and layer \$3 not S169	US-PGPUB; USPAT	OR	ON	2009/10/22 11:24
S172	1	piezoelectric with (pump \$4 micropump\$4) with layer and (capillar\$4 microfluid\$4) and layer \$3 and layer\$3 with (aperture through-hole through adj hole bore) not S169	US-PGPUB; USPAT	OR	ON	2009/10/22 11:25

S173	37	piezoelectric with (pump\$4 micropump\$4) and (pump\$4 micropump\$4) with layer and (capillar\$4 microfluid\$4) and layer\$3 and layer\$3 with (aperture through-hole through adj hole bore) not S169	US-PGPUB; USPAT	OR	ON	2009/10/22 12:13
S174	8	(pressure near1 differen\$5 resistance) with (length near1 channel) with direction with flow and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 12:15
S175	25	(pressure near1 differen\$5 resistance) with (length near1 channel) same control\$4 with direction with flow and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/22 12:17
S176	25	(pressure near1 differen\$5 resistance) with (length near1 channel) same control\$4 with direction with flow and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:17
S177	0	(pressure near1 differen\$5 resistance) with (relationship dependent) with (length near1 channel) same control\$4 with direction with flow and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:19
S178	0	(pressure resistance) with (relationship dependent) with (length near1 channel) same control\$4 with direction with flow and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:19
S179	10	(inlet) with outlet with (length) same control\$4 with direction with flow and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:21

S180	21	channel with dimension with control\$4 with direction with flow and (capillar\$4 microfluid \$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:21
S181	12	channel with length with control\$4 with direction with flow and (capillar\$4 microfluid \$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:24
S182	421	channel with length with resistance and (capillar\$4 microfluid \$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:29
S183	59	control\$4 with direction with flow with resistance and (capillar \$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:31
S184	8	control\$4 with direction with flow with flow adj resistance and (capillar \$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:32
S185	1	direction with flow adj resistance with inlet with greater with outlet and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:34
S186	11	flow adj resistance with inlet with greater with outlet and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:34
S187	4	flow adj resistance near2 (less greater) with inlet with outlet and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:35
S188	1	balachandran.in. and flow adj resistance near2 (less greater) with inlet with outlet and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/10/22 12:37
S189	46	"048389"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/10/22 12:38

S190	57	"048847"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/10/22 12:40
S191	0	"03/048389"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/10/22 12:41
S192	4	"03048389"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/10/22 12:41
S193	134	flow adj resistance with inlet with outlet and (capillar\$4 microfluid \$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:42
S194	23	(micropump\$4 pump \$4) with flow adj resistance with inlet with outlet and (capillar \$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:43
S195	2	flow adj resistance with inlet with outlet with length near2 channel and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:45
S196	15	flow adj resistance with inlet with outlet with length and (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:45
S197	100	flow adj resistance with length with (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:47
S198	30217	flow adj resistance (relationship related) with length with (capillar\$4 microfluid \$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:47
S199	1	flow adj resistance with (relationship related) with length near2 (capillar\$4 microfluid \$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:47

S200	1	flow adj resistance with (relationship related) with length with (capillar\$4 microfluid \$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:48
S201	1	flow adj resistance with (relationship related) with length same (capillar\$4 microfluid \$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:48
S202	5	flow adj resistance with (alter\$4 chang\$4) with length same (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:50
S203	3	flow adj resistance with (longer) with (channel length) with greater same (capillar\$4 microfluid\$4) not S174	US-PGPUB; USPAT	OR	ON	2009/10/22 12:52
S204	19	(US-20030203271-\$ or US-20040200724-\$ or US-20020039280-\$ or US-20020098124-\$ or US-20020037499-\$ or US-20020155010-\$ or US-20030143122-\$ or US-20060246431-\$ or US-20020033337-\$ or US-20020019059-\$). did. or (US-6068752-\$ or US-6602791-\$ or US-5846396-\$ or US-6251343-\$ or US-6749813-\$ or US-6644944-\$ or US-5474796-\$ or US-5759015-\$ or US-6458325-\$).did.	US-PGPUB; USPAT	OR	OFF	2009/10/22 15:41
S205	18	S204 and layer	US-PGPUB; USPAT	OR	ON	2009/10/22 15:42
S206	8	S204 and layer and piezoelectric	US-PGPUB; USPAT	OR	ON	2009/10/22 15:42
S207	5	S204 and flow adj resistance	US-PGPUB; USPAT	OR	ON	2009/10/22 16:57
S208	8	(pressure near1 differen \$5 resistance) with (length near1 channel) with direction with flow and (capillar\$4 microfluid\$4)	US-PGPUB; USPAT	OR	ON	2009/10/23 11:08

S209	0	flow adj resistance with (shorter) with (channel length) with greater same (capillar\$4 microfluid\$4) not S208	US-PGPUB; USPAT	OR	ON	2009/10/23 11:08
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**10/ 23/ 2009 12:56:18 PM****C:\ Documents and Settings\ phyun\ My Documents\ EAST\ Workspaces\ 10,664,436.wsp**